A CONTRACTING OUT SUCCESS STORY.

Major General Esker K. Davis
Manager of J]'] .'s Institutional
Computing and Mission
Operations Division
Jet Propulsion 1 aboratory
California Institute of Technology

Introduction

This paper is based on the highly successful Mission and Completing Support (MACS) Contract, between the Jet l'repulsion Laboratory (J]'],) and OAO Corporation, which encompasses a comprehensive set of work for information systems and services. JPI. awarded the MACS contract in 1988 and saw very successful operations during the first five years which were recently completed. The MACS contractor is now continuing under a [hrcc-year extension in which J]'] .exercised three of the five 1-year options which arc built into the contract.

The Jet Propulsion Laboratory is a federally funded research and development center (FFRDC) operated by Caltech under contract to the National Aeronautics and Space Administration (NASA). J])] .'s primary mission is exploration of the solar system and involves about 6,700 JPI. employees and 1,500 contractors at the Pasadena, California site.

Mr. Raab's description of' this year's conference theme pointed out some of the challenges of the situation around us, and he posed several questions which are critical to successful outsourcing. in the MACS Contract experience, we faced a very similar situation, and we addressed many of these same questions. It was also good to read in Mr. Gelb's review of the 26th conference proceedings that "outsourcing is no longer a dirty word." It's much belle.r to talk about outsourcing with people who arc over that hurdle.

Therefore, my primary purpose in this paper is to describe JPI.'s successful outsourcing experience with the MACS contract and in doing so, to respond to some of the questions and pressing issues which confront those who would consider contracting out as a means of meeting their information systems and services needs. Let's start with a brief look at the situation.

The Situation

The Nature of information Technology (l'J'). 11 is essential that we understand the critical

importance of information technology (l'J') in all that we do. Many say that ours is becoming an information -dominant or knowledge-driven world. Some call this the information age. In today's complex world, we rely heavily on 1'1' to generate, acquire, communicate, assimilate, evaluate, and to apply knowledge; we also rely more on getting things done through groups or teams of people rather than through individual effort. As MI. Raab's note on the conference theme said, "The use of IT to support public administration is now all but universal. "

However, in retrospect, information and knowledge and the application of technical knowledge (technology) always have had a significant presence and in fact, have provided the fundamental basis for all major advancements in civil ization since the beginning of human existence. Knowledge is power. Or, perhaps more correctl y said: knowledge along with the wherewithal to apply it and exploit it - be it financial, political, military, or national-will wherewithal - gives the power to achieve excellence.

1 n their best selling book, *Reengineering The Corporation* , M ichael 1 Iammer and lames Champy included a chapter called "The 1 Enabling Role of Information Technology". The authors state that information technology can give solutions to problems that aren't known to exist; one must then be creative enough to find the problem which it solves. Of Course, information technology gives ways to resolve many difficult, known problems and to improve key processes. Information technology can also lead to new rules for doing things differently, to whole new paradigms.

What dots all of this mean'? 1 believe it means that it is very difficult to over state the importance of information technology in today's complex, ever changing, interactive world. information technology must be responsive, flexible, dynamic, leading, and proactive. And, to do so, 1 believe that there must be a new paradigm which would integrate information, information technology, information systems, and information users with process and workflow in a well engineered manner. nut, this is a topic for a future paper as this discipline evolves and matures.

As is usually the case, the more important something is, the more difficult it may be to achieve desired outcomes, Information technology alone involves challenges, but now one would imposed the added complexity of contracting out for some or all of it thus raising, additional questions and issues that must be carefully addressed.

Outsourcing Questions and Concerns

What are the questions and concerns regarding outsourcing? One doesn't have to look far to find the answer to this question. The conference theme description as well as many of the session headings clearly reflect several things that people arc concerned about. Some of these fundamental questions arc as follows:

o Why outsource? What drives one to consider outsourcing in the first place? Wily would anyone want to "give away" part of their responsibility or organization to a n outside contract? Why transfer **IT** work to the private sector? 11 is apparent (hat these questions quickly evoke emotions over territory and empires and power. 1 lowever, the MACS experience indicates that there arc some good reasons 10 do so, although they may not be very evident in the beginning.

o Which **work to** out **source**? W hich jobs, positions, services, and tasks can be contracted out? 1 low does one choose which and how much of these to outsource? At what stage of the provisioning can outsourcing be accomplished? W h a t principles of **IT** outsourcing appear to be evolving? Complex

issues surround time questions, and the! options are nearly endless. And, it is interesting to note that many decision makers are blind to the possibilities. Flexibility and tailoring are obviously key characteristics of an approach to these issues.

o How to get quality and value? I1o w does one maintain quality in products and services delivery when outsourcing? I low can the achievement of cost, schedule, and quality objectives best be achieved? I low is customer-supplier alignment achieved and maintained? I low does one go beyond the product delivered to assure that quality processes are employed? These questions correctly imply that achieving the desired outcomes is not simply one of assessing product cost, schedule, and quality al the interfaces.

o **What about career** paths? What is the impact of outsourcing on career paths and professional development? This question is important to both the agency and the contractor. One may find severe impacts after the fact if early consideration is not given to [his question, and contractually this is often ignored. It should also influence decisions about which work to contract out in the first place. Close coordination and understandings between the agency and contractor are important characteristics for achieving the right outcomes in this area.

() **What are** the contractual **implications**? If one has partnerships, should their nature be one of mutual trust in pursuit of common objectives or should it be strictly contractual and at arms length? The answers here appear to be more straight forward as to what's necessary to achieve desired outcomes; however, one may need to resolve resistance from procurement and contracting people.

o What arc **some of the** hazards **to** avoid'? Arc there lessons learned that may be applied to other situations?

Some answers and insights into these questions, based upon JPI .'s MACS experience, reveal many factors which facilitated our achieving desired results, They, along with other MACS contract feat ures discussed, should prove useful in other outsourcing situations.

Answers and Insights From the MA CS Experience

Why Contract Out? Why did JPI, consider outsourcing? As is often the case, **necessity** was the initial driver behind J]'] .'s action to contract our a major amount of work which would amount to over 420 work years per year. About six years ago, J]'], was facing a major increase in mission operations, the operations bulge, due to the backlog of missions that would be launched and operated during the decade of the 1990s. This would demand a substantial increase in workforce. 1 lowever, at the same time, J]'], was operating under a guideline of no-growth in the JPI, workforce. Therefore, accommodating the operations bulge with J])], workforce would be at the expense of that portion of JPI ,'s workforce which was focused on technology, engineering, and development. The more desirable alternative was to contract out much of the work associated with space mission and institutional information services, information systems, and their operation and maintenance. The MACS contract concept was born out of necessity, but it became much more as the concept evolved during preparation of the request for proposals.

Another primary reason for outsourcing is flexibility. Having the right contractual vehicle already in place to accommodate new work or fluctuations in workload is a very powerful arrangement for the outsourcing organization. The organization which builds in flexibility in this manner can be both

responsive and proactive regarding dynamic customer needs.

one's organization can also enjoy greater stability in its workforce by outsourcing. The contractor workforce is used as a buffer to accommodate most of the peaks and valleys. The contractor adds or releases workforce as the requirements change. In the event of serious downturns, the outsourcing organization may also choose to return some of the contracted work to be done in house, an arrangement which should be written into the contract and/or well UINICIX1OO(I among the key managers.

Technology transfer is another good factor to put into the decision situation regarding outsourcing. The rapid pace of technological change, particularly today's information technology, requires organizations to rely on technology transfer to stay current. Technology transfer at its best is a two way process benefitting both parties. '1'here's a lot going on outside your organi7.alien; open a door to it through outsourcing.

Outsourcing may help provide organizations with the right **expertise and skills** that tire essential to the enterprise when they arc not available from internal resources. The arrangement may be short term until internal expertise is developed or king, term if the organization has no interest in getting into a particular discipline.

'1'here appear to be some good economic **factors** to think about in the outsourcing equat ion. Too often it is autor natically assumed that contracting out will cost more than doing the work in house. Consider that the organization may gain access to needed infrastructure such as facilities, laboratories, equipment, computer centers, networks without any initial outlays. Large internal fixed costs which are spread across a few users may show up as much less as the contractor spreads such costs across a larger cost center base. The right incentives can cause the contractor to do work better, faster, cheaper than it is currently being done; more about this later.

Contracting out is the politically **correct** t ICI)(I. Governments want to scc more involvement by private industry. More teaming with the private sector and more contracting out are being sought in many areas. Commitments have been made to substantially increase the amount of government business done with small and disadvantaged businesses and women owned businesses.

These then are some of the reasons why organizations should very favorably consider outsourcing to meet their information system, information services, and information technology needs. Next we will examine the question of which work it is that one should outsource.

Which **Work to Outsource?** JPL's initial thinking about the MACS contract was that wc would essentially continue our trend toward level of effort support work focused mainly on the operations and maintenance of mission and institutional computing, communications, and information systems. Fortunately wc questioned this narrow focus and began to think shout a broader, more flexible scope of work.

We increased the phases fron n only operations and maintenance to encompass the **full** life **cycle**: development, implementation, testing, training, operations, sustaining, maintenance. Equally important, we defined **variable work modes** which the contractor could be asked to employ in carrying, out the assigned work, giving a very flexible and responsive spectrum of possibilities to fit every need: body shop, support tasking, level of effort tasking (I ,01{) and true task mode. Organizations often like to take small steps first in contracting, out, and

this spectrum of approaches allowed us to do so, moving more work to the true task mode when successful outcomes were achieved and trust built up. This concept is illustrated in Figure 1.

1 Figure 1 is annotated to show increasing contractor responsibility for various functions as the work assignment mode progresses from the body shop type to the [rue task mode wherein the contractor has full responsibility to deliver products and services which meet customer requirements.

Subcontracting or teaming is something that one should expect and plan for in large outsourcing efforts wherein any one contractor may not have all of the expertise required. Subcontracting can also be used as a means to further other organizational objectives, such as: supporting small business, mail minority and women owned firms, local community redevelopment efforts, minority hiring. Under the MACS contract annual operating plan, goals are set in some of tile areas.

One may also structure the contract to cover certain **desirable features** as wc did in the MACS contract, including: award fee sharing by contractor employees, portable ret irement plans, minorit y college scholarships, and so forth. Ask for contractors to propose things that are thought to be worthwhile; it may be that the contractor can propose to do them at little or no cost.

Figure 2 shows the **broad** work **breakdown structure** (WBS) that is a key feature of the MACS contract. One should note, however, that although the WBS provides for a wide range of possibilities, it was made clear that it was not mandatory that J])]. organizations use the MACS contract exclusively (o get their new added work done. This provided a measure of cont inued compet it iveness and an incentive for the MACS contractor to provide outstanding performance. Figures 2-1 through 2-3 take a closer look at those parts of the WBS which focus on institutional information, institutional information services, institutional information Systems, and information technology.

A set of **outsourcing criteria** has evolved which assists in deciding whether certain work is appropriate to put in the hands of the contractor or whether J]'], should retain responsibility.

o J]]]. should not outsource its core product lines or contract out in a manner that d iminishes core competencies which are critical to achieving J]'] ,'s long term goals, including positions needed to assure adequate career paths for employees.

o Give due consideration to the impact on people when making outsourcing decisions; such impact cannot be totally avoided in most outsourcing cases.

o U sc cent ractors, preferabl y off- 1 ab, (o help J]']. stay within workforce **and** facility space constraints and to improve internal workforce stability.

o Use contractors to acquire needed skills, technology, infrastructure, etc.

o Contractors will not be put in a position that commits the institution (JPL).

o {contractors will not represent JPL in interfacing with our customers; they will not be put in a position which requires independent interfacing with external customers.

o Contractors will not be in posit ion to make decisions which are critical 10 mission success.

cent ract. When the end of the first five-year period was approaching, we exercised three of these options based on the highly satisfactory and successful outcomes of the first five years. One could consider starting out with less than five years in the first increment to further incentivize performance from the outset.

It is said that if you aren't measuring, you aren't managing, or you aren't managing as well as you could, **Metrics or measures** figure prominently in the MACS contract to help achieve quality and value objectives and to pursue continuous improvement, **Results measures** look at such things as customer satisfaction, product quality, service cycle time, and response time; while **process measures** look at the efficiency and effectiveness of the process which delivers the products and services in terms of costs, workforce, cycle time, quality of life in the work place.

1 lowever, onc shouldn't lose sight of the fact that people. arc the most important resource, and the leadership provided by key JPL and MACS contractor people is the essential attribute to achieving excellent results.

Career Opportunities. Career development is a kcy issue both from the viewpoint of the contracting entity and the contractor. Perhaps it should be, but one won't find this subject written into the contract. 1 lowever, arrangements that serve both interests have evolved,

1 transferred about 50 percent of my J]']. positions to the MACS contract, Many of these positions were for lower level engineering and administrative work, entry level, and mid level positions. In other words, some Of the contracted work was generally the lower halves of my Division's career ladders. I had significantly fewer entry level or developmental positions. Consequently, the contractor and I agreed that OAO could in effect be a primary source of applicants for advertised JPL positions. Such practice had formerly been discouraged due to contractors' complaints that one was raiding and stealing his workforce. Under the MACS contract this is a normal event, an expected outcome that is done openly and is coordinated. The contractor 10SCS people but not positions; 63 people have crossed over this bridge to date. Pension portability is an issue, and having it portable facilitates this arrangement. Although compensation is based on the position, consideration is given to keeping those who transfer "whole" with regard to the total benefit package,

In the case where the contractor took over whole tasks, such as computer center operations and maintenance, J]'], obviously had made a decision to no longer be in this career field. J]'] ers who were computer operators and didn't cross train to other skills had little choice other than seeking work in the positions transferred or with other companies performing similar work,

A Caveat. In the MACS case, wc were faced with a period of growth; therefore, there was generally no threat to the status of J]']. people, although some displacement to other positions would be expected as the growth occurred. One dots not always have this fortunate situation; in which case, transfer of encumbered positions to be filled and performed by the contractor could cause major impact and concern to J]'], employees. It is important to note that in the few cases where this has happened, wc have always transferred the work and the position, not the J]'], employee. Wc deal with the position and inform the employee that he or she may be a preferred candidate to fill the position should they choose to apply to the contractor for the job. They may, of course, choose to apply for work in other JPL positions rather than joining the contractor.

Principles. Are there any IT outsourcing principles which may be gleaned from the MACS experience? Onc thought which appeared repeatedly and which is so important that it should be considered a principle is that of' **flexibility**. Other thoughts wherein principles may lie, 1 think, are as follows: **Focusing on where** one wants to go, the vision, mission, goals; identifying and maintaining **core competencies**; strong, sustained **commitment** to the outsource concept; incentives and **measures** which are aligned with goals; dedicated leadership and **advocacy; con! inuous improvement**; and the state of teaming and **empowerment** which permit people to perform to their full capabilities.

Pitfalls. The MACS outsourcing effort had its share of problems, but most of these arc of the type common to many contracting situations. I lowever, a fcw stand out as noteworthy as follows: lack of vision as to the benefits of outsourcing; taking a view that is too limited; trying to bc too dc.tailed in the RFP and contract; seeing everything as core competencies such that nothing can bc outsourced in a true task mode; arbitrary decisions as to what to outsource or the meek get outsourced; lack of corporate memory as to what was intended and weakening of the sustained commitment; inability to deliver on "hand-shake" arrangements; and intervention into operations by legal and/or procurement people,

And, onc may eventually find some principles embedded in these pitfalls as well, such as the principle of **owner control** - which means that the process owner must maintain control and never lets the lawyers or procurement people take over.

Concluding Remarks

Outsourcing through the MACS contractual vehicle has been very successful for JPI, in the IT area, but I consider that wc arc still at a rather early stage in this endeavour. 1 am now getting substantial pressures to do more outsourcing, and more will be done. in fact, some arc saying that wc should outsource everything having to do with IT since this is low technology and not onc of JPI ,'s çore competencies. I lowever, I believe thinking such as this goes too far when onc considers what I said at the beginning about the nature of information and its importance to the enterprise, the enabling technology for achieving excellence. Some parts of IT should bc considered as core assets and a component of core competencies in one's organization,

I thank the ICA for this opportunity to share these experiences in IT outsourcing. Arc there any questions?

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27th ICE CONFERENCE

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"MACS"
Mission And Computing Support Contract

Esker K. Davis
Jet Propulsion Laboratory

	CONTRACTOR RESPONSIBILITY			
	BODY SHOP	SUPPOW TASK	LOE TASK	TASK
Wage & Benefit Administration	•	•	•	•
Recruiting	•	•	•	•
Career Development	•	•	•	•
Schedule		•	•	•
QA		•	•	•
Technical Direction			•	•
Cost/Budge:				•

Figure 1: MACS Contract Variable Work Modes

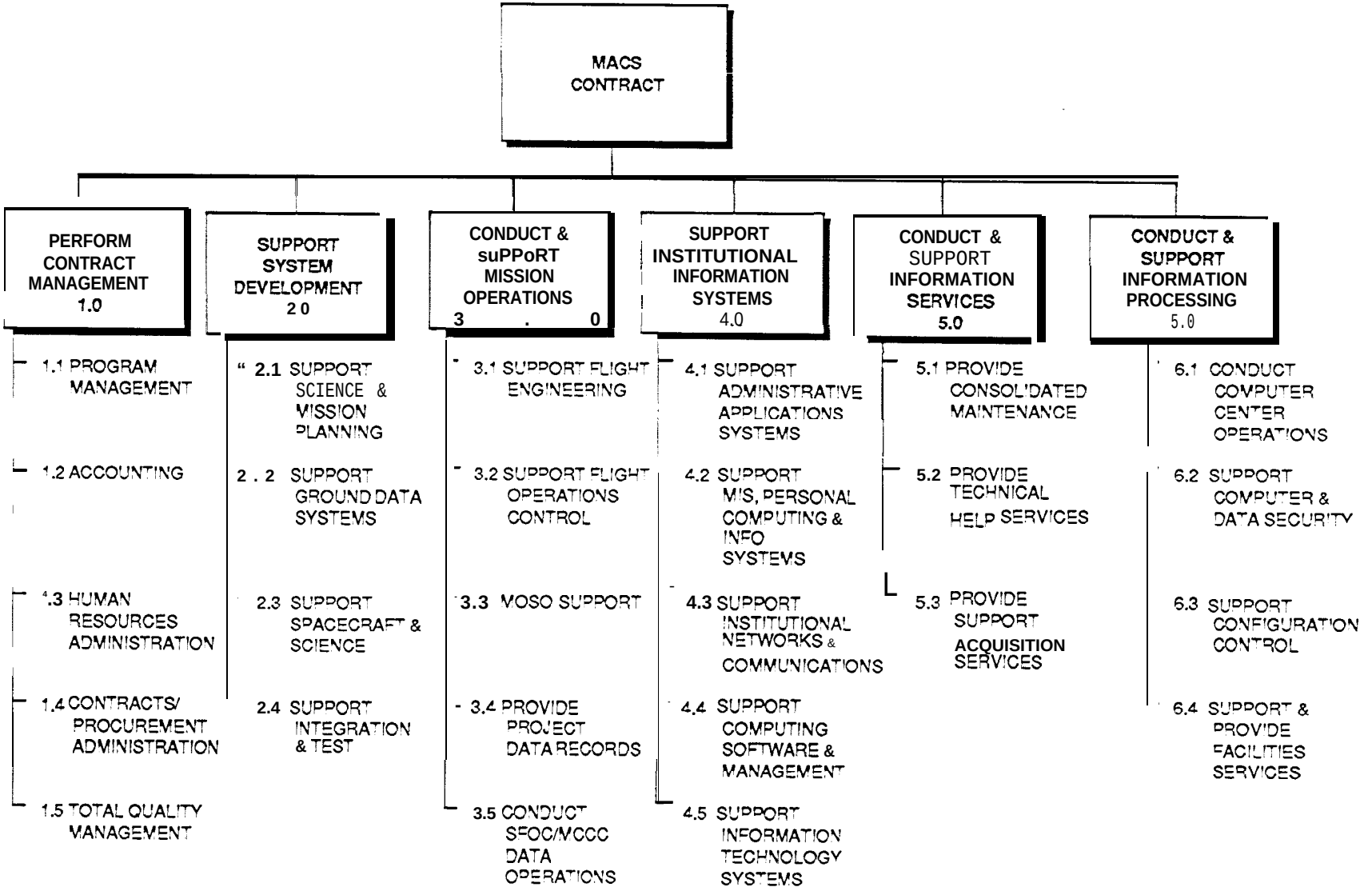

Figure 2: MACS Contract Work Breakdown Structure (WBS)

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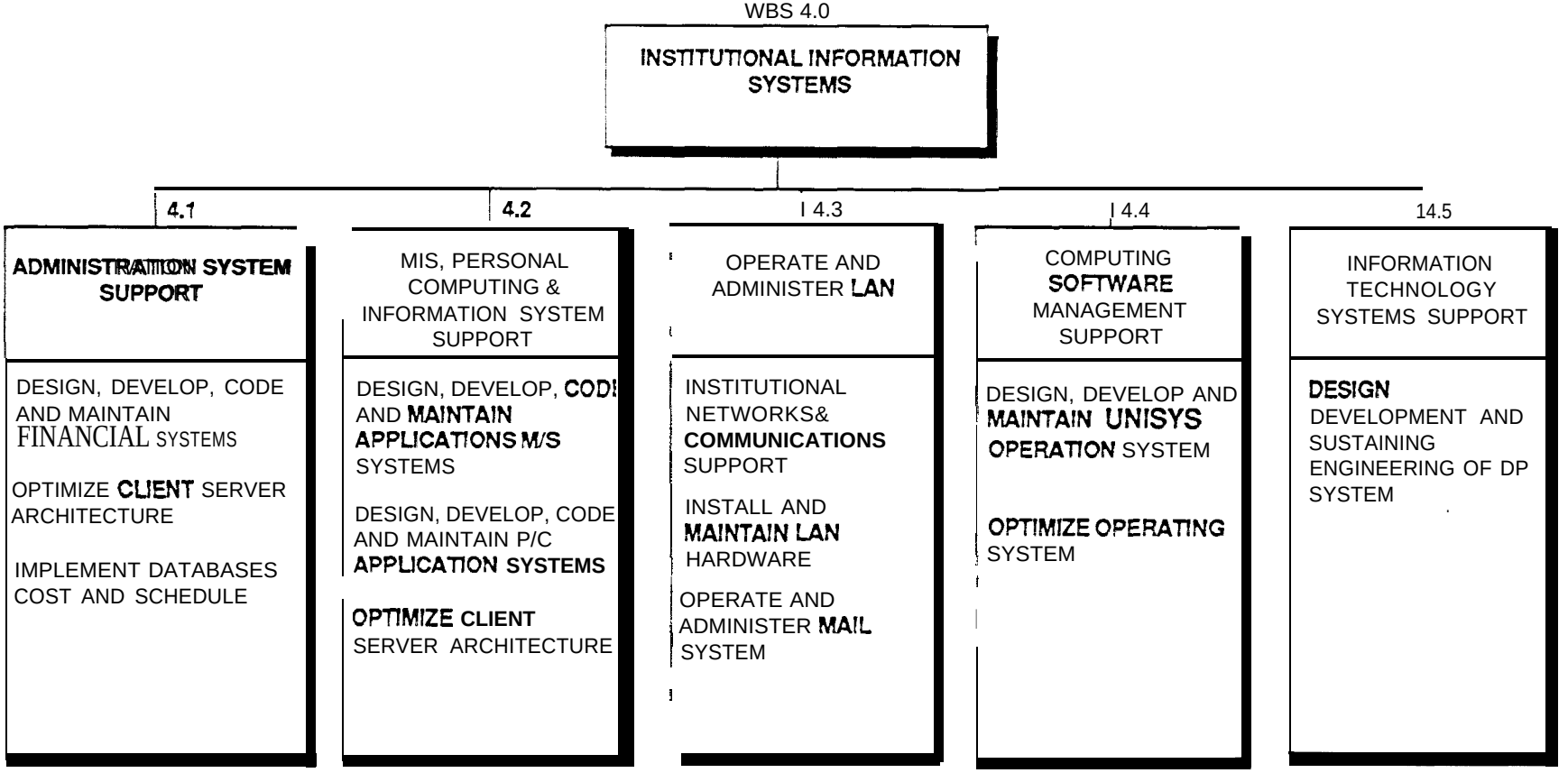

Figure 2-1: WBS ***Area*** 4.0 Expanded

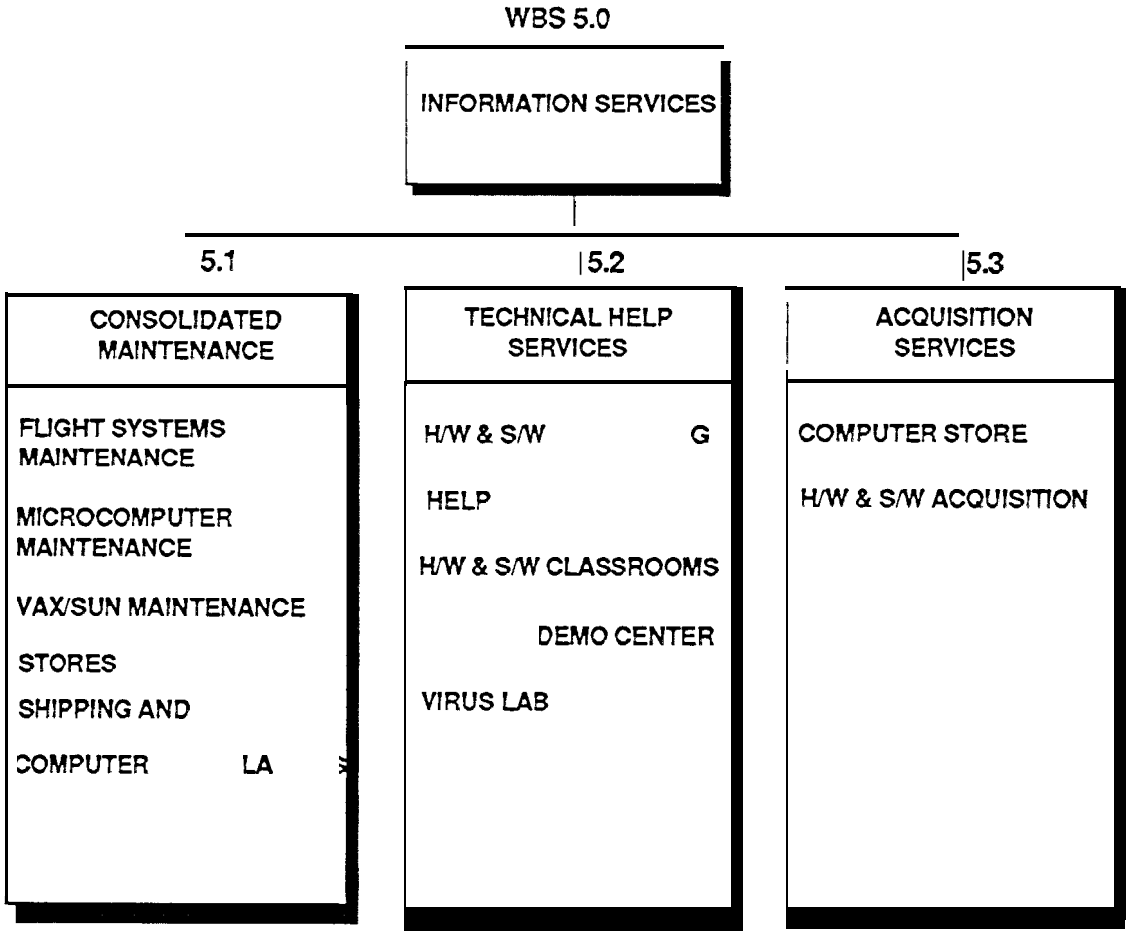

Figure 2-2: WBS Area 5.0 Expanded

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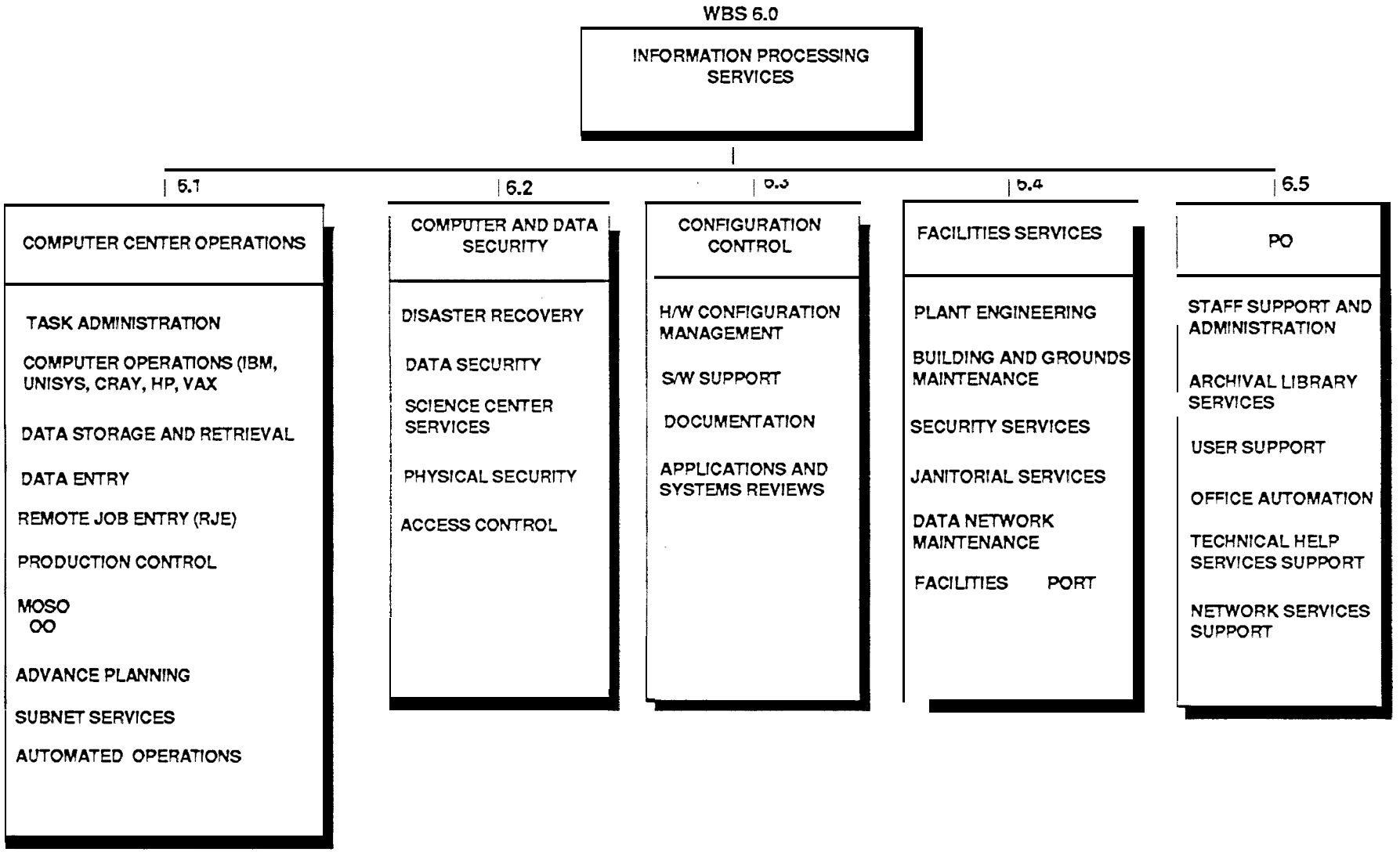

Figure 2-3: WBS Area 6.0 Expanded